

What is claimed is:

1. A wireless terminal configured to communicate over a wireless local area network, comprising:
 - 5 a data processor;
 - at least one control unit that is responsive to the data processor and that controls communications with an access point over a first communications channel and over a second full-duplex communications channel;
 - a first interface between the at least one control unit and the first
 - 10 communications channel; and
 - a second interface between the at least one control unit and the second communications channel.
2. The wireless terminal of Claim 1, wherein the at least one control unit comprises a MAC control unit.
- 15 3. The wireless terminal of Claim 2, further comprising a traffic control unit that is responsive to the data processor.
4. The wireless terminal of Claim 3, wherein the at least one MAC control unit comprises a first MAC control unit for controlling communications with the access point over the first communications channel and a second MAC control
- 20 unit for controlling communications with the access point over the second communications channel.
5. The wireless terminal of Claim 2, wherein the at least one MAC control unit also includes a traffic control unit that forms a data transmission route for each of a plurality of applications running on the wireless terminal.
- 25 6. The wireless terminal of Claim 2, wherein the first channel comprises a half-duplex channel that only carries data from the access point to the wireless terminal.
7. The wireless terminal of Claim 6, wherein data associated with a multi-media application is transmitted over the first channel.

8. The wireless terminal of Claim 2, wherein the first communications channel is implemented as an orthogonal frequency division multiplexing channel and wherein the second communications channel is implemented as a direct sequence spread spectrum communications channel.

5 9. The wireless terminal of Claim 2, wherein data associated with a first application running on the wireless terminal is transmitted to the wireless terminal over the first communications channel, and wherein at least some of the control signals associated with the first application are transmitted from the wireless terminal to the access point over the second communications channel.

10 10. The wireless terminal of Claim 1, wherein the wireless local area network operates at least in part under the IEEE 802.11 standard.

11. The wireless terminal of Claim 2, wherein the first communications channel and the second communications channel are implemented in different frequency bands.

15 12. The wireless terminal of Claim 2, wherein the first and second communications channel are implemented using different multiple access techniques.

13. The wireless terminal of Claim 1, wherein the first communications channel and the second communications channel are implemented according to different versions of the 802.11 standard.

20 14. A wireless communications system, comprising:
a wireless terminal that transmits and receives data associated with at least first and second applications that are running on the wireless terminal;
an access point that serves as an interface between the wireless terminal and at least one processing server that is located on at least one external network;
25 a first communications channel between the wireless terminal and the access point for transmitting data associated with the first application from the access point to the wireless terminal; and
a second communications channel between the wireless terminal and the access point for transmitting data associated with the second application between the

wireless terminal and the access point.

15. The wireless communications system of Claim 14, wherein the second communications channel is further used to transmit control information associated with the first application from the wireless terminal to the access point.

5 16. The wireless communications system of Claim 14, wherein the first communications channel is further used to transmit control information associated with the first application from the wireless terminal to the access point.

17. The wireless communications system of Claim 14, wherein the throughput of the first communications channel exceeds the throughput of the second
10 communications channel.

18. The wireless communications system of Claim 14, wherein the wireless terminal comprises:

a data processor;

at least one MAC control unit that is responsive to the data processor and that
15 controls communications with the access point over the first communications channel and over the second communications channel;

a first interface between the at least one MAC control unit and the first communications channel; and

a second interface between the at least one MAC control unit and the second
20 communications channel.

19. The wireless communications system of Claim 18, wherein the access point comprises:

a second data processor;

at least one access point MAC control unit that is responsive to the second
25 data processor and that controls communications with the wireless terminal over the first communications channel and over the second communications channel;

a third interface between the at least one access point MAC control unit and the first communications channel; and

a fourth interface between the at least one access point MAC control unit and
30 the second communications channel.

20. The wireless communications system of Claim 19, wherein the wireless terminal further comprises a first traffic control unit that is responsive to the data processor, and wherein the access point further comprises a second traffic control unit that is responsive to the second data processor.

5 21. The wireless communications system of Claim 18, wherein the at least one MAC control unit comprises a first MAC control unit for controlling communications with the access point over the first communications channel and a second MAC control unit for controlling communications with the access point over the second communications channel, wherein the first interface is an interface
10 between the first MAC control unit and the first communications channel and wherein the second interface is an interface between the second MAC control unit and the second communications channel.

22. The wireless communications system of Claim 14, wherein the first channel comprises a uni-directional channel that only transmits data from the access
15 point to the wireless terminal.

23. The wireless communications system of Claim 14, wherein the first communications channel is implemented as an orthogonal frequency division multiplexing channel and wherein the second communications channel is implemented as a direct sequence spread spectrum communications channel.

20 24. The wireless communications system of Claim 14, wherein at least some of the control signals associated with the first application are transmitted from the wireless terminal to the access point over the second communications channel.

25 25. The wireless communications system of Claim 14, wherein the access point and the wireless terminal communicate at least in part under the IEEE 802.11 standard.

26. A method for supporting a plurality of applications on a wireless terminal, the method comprising:

receiving at the wireless terminal over a first communications channel between the wireless terminal and an access point application data associated with a

first of the plurality applications;

establishing a transmission path between the wireless terminal and the access point over a second communications channel for application data associated with a second of the plurality of applications; and

5 transmitting application data associated with the second of the plurality applications over the second communications channel via the transmission path.

27. The method of Claim 26, further comprising transmitting data associated with the first of the plurality applications over the second communications channel via the transmission path.

10 28. The method of Claim 26, further comprising transmitting control data associated with the first of the plurality applications from the wireless terminal to the access point over the first communications channel.

29. The method of Claim 26, wherein the first communications channel is implemented as an orthogonal frequency division multiplexing channel and wherein
15 the second communications channel is implemented as a direct sequence spread spectrum communications channel.

30. The method of Claim 26, wherein the first communications channel is a high throughput uni-directional communications channel.

31. The method of Claim 26, wherein the wireless local area network
20 operates at least in part under the IEEE 802.11 standard.

32. The method of Claim 31, wherein the first application is a multi-media application.

33. A wireless communication system for transmitting and receiving a data from a plurality of applications, comprising:

25 a wireless terminal for transmitting and receiving data associated with a first of the plurality of applications and for running the first application;

an access point interfaced with an external processing server, the access point transmitting data associated with a second application of the plurality of applications

to the wireless terminal, and forwarding the data associated with the first application that is received from the wireless terminal to the external processing server; and

5 a plurality of wireless channels for transmitting and receiving the data associated with the first and second applications between the wireless terminal and the access point.

34. The wireless communication system of Claim 33, wherein the plurality of wireless channels operates in different frequency bands and have different throughputs.

10 35. The wireless communication system of Claim 34, wherein the first wireless channel uses an orthogonal frequency division multiplexing multiple access protocol and the second wireless channel uses a direct sequence spread spectrum multiple access protocol.

15 36. The wireless communications system of Claim 34, wherein the plurality of wireless channels include at least two channels that are implemented pursuant to different versions of the 802.11 standard.